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The Road to Target: Stroke Honor Roll Elite Plus

Jayme Strauss
Baptist Hospital of Miami; Baptist Neuroscience Center, jaymes@baptisthealth.net

Andrew Waisbrot
Baptist Hospital of Miami, AndrewWa@baptisthealth.net

Daniel Hartnett
Baptist Hospital of Miami, DanielH1@baptisthealth.net

Amy Starosciak
Baptist Health South Florida, amyst@baptisthealth.net

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Jayme Strauss, MSN, RN, MBA, SCRN, Andrew Waisbrot, BSN, RN,
Daniel Hartnett, MSN, RN, SCRN, Amy K. Starosciak, Ph.D.

Baptist Health Neuroscience Center
BAPTIST HEALTH SOUTH FLORIDA

American Heart Association / American Stroke Association — The Joint Commission Certification, Disease-Specific Care
American Heart Association American Stroke Association CERTIFICATION
Meets standards for Comprehensive Stroke Center

INTRODUCTION

One minute of brain ischemia kills 2 million neurons and 14 billion synapses. Longer treatment times decrease the likelihood of good functional recovery. The American Stroke Association implemented the Target: Stroke Elite Plus campaign to reduce treatment delays and improve outcomes. For a center to win this Elite Plus Award, patients must receive IV t-PA within 60 minutes of hospital arrival 75% of the time, and treated within 45 minutes 50% of the time.

PURPOSE

Early in fiscal year 2015, the Door-To-Needle (D2N) and Door-To-Reperfusion (D2R) times at our comprehensive center rose to 78 min and 154 min, respectively. The rate of IV t-PA administration in 60 min decreased to 17%. Therefore, the stroke team used lean methodology (Teams Refocus Imagine Measure; TRIM) to reduce DTN and DTR, improve outcomes, and achieve Elite Plus status.

Measurements	Target	FY14	Oct	Nov	Dec	Jan 15
Door to Needle (D2N) time	60 Min	**57 min**	66 min	53 min	68 min	78 min
Percent of patients treated w/t-PA < 60 min	>75%	**76%**	60%	80%	56%	17%
Door to Groin	<105 min		109 min	139 min	124 min	108 min
Door to Reperfusion (1st Pass)	< 120 min	**146 min**	156 min	165 min	146 min	133 min
Door to Full Reperfusion	N/A		175 min	197 min	172 min	154 min

Table 1. Average Door to Needle, Door to Intervention Times

METHODS

TRIM and Plan-Do-Check-Act methods, value stream mapping, A3 problem solving and real-time observations were used to identify barriers, duplications and wasted time. The following major changes were made over the last 2 years:

- All strokes to Trauma Room 49
- Quick registration
- EDP educate on t-PA
- Glucose and EKG accepted from EMS
- Do not insert Foley
- "One page" alert system
- Quick bleeding risk checklist
- MAC anesthesia approach
- No written consent for treatment
- D2N goal from 60 to 45 min
- t-PA in CT Scan
- Security escort to gallery

RESULTS

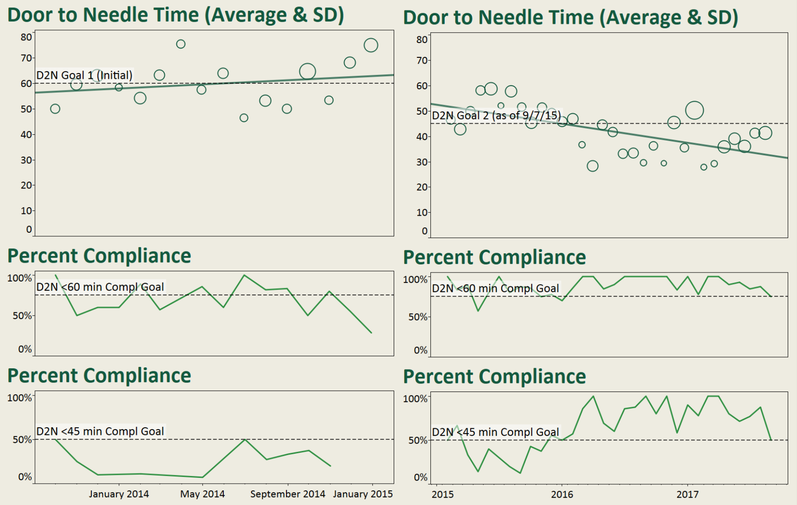

Figure 1. Average ± SD for D2N (top panels) and percent compliance with D2N ≤ 60 min (middle panels) or D2N ≤ 45 min (bottom panels). Results before TRIM process was initiated (left panels) and after TRIM (right panels).

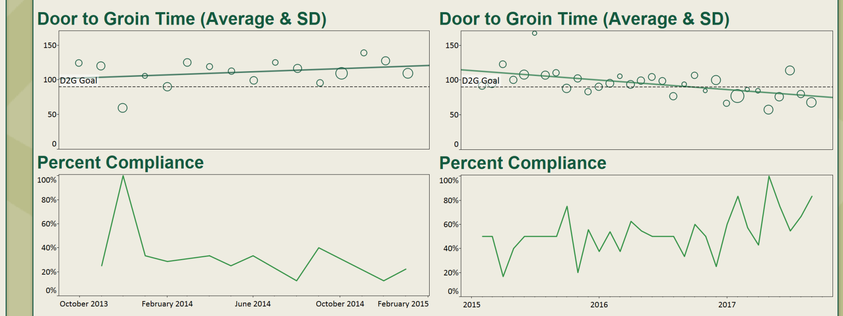

Figure 2. Average ± SD for D2G (top panels) and percent compliance with D2G ≤ 90 min (bottom panels). Results before TRIM process was initiated (left panels) and after TRIM (right panels).

RESULTS (cont'd)

Measurements	Target	Before TRIM	After TRIM
Door to Needle (D2N) time	45 Min	59 ± 18 min	42 ± 18 min
Percent of patients treated w/t-PA < 45 min	>50%	27%	73%
Door to Groin	<90 min	112 ± 36 min	93 ± 45 min
Door to Reperfusion (1st Pass)	< 120 min	143 ± 42 min	120 ± 46 min
Door to Full Reperfusion	N/A	173 ± 39 min	138 ± 51 min

Table 2. Average Times before and after the TRIM process

90-day mRS

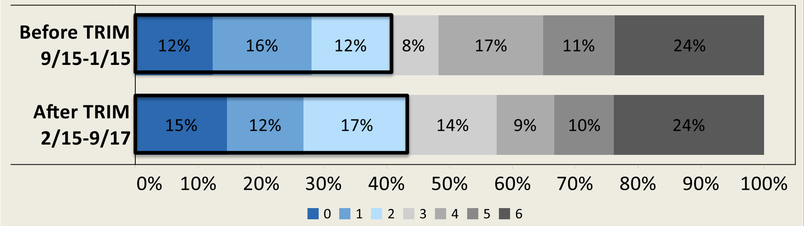

Figure 3. 90-d modified Rankin Scale scores before and after TRIM. A score of 0-2 (blue) is considered good clinical outcome. Median initial NIHSS was similar at both time points (Before: 12, After: 13).

CONCLUSIONS

Through an organized multidisciplinary team approach using standardized process improvement methods, identified best practices, stroke treatment was faster, we achieved Elite Plus status for 2017, and we improved patient outcomes.

ACKNOWLEDGMENTS

Thank you to the Baptist Hospital Stroke TRIM Committee for their tremendous hard work and persistent pursuit of excellence.

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